

## Engineering Interpretations

### **Water Management**

Interpretations of soils for water management are given as limitations for pond reservoir areas; embankments, dikes, and levees; excavated pond (aquifer-fed); and as restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

**POND RESERVOIR AREA** is the area that holds water behind a dam or embankment. Soils best suited to this use have a low seepage potential, which is determined by the permeability and depth to fractured or permeable bedrock, or other permeable material.

**EMBANKMENTS, DIKES, AND LEVEES** are raised structures of soil material constructed to impound water or protect land against overflow. They generally are less than 20 feet high and are constructed of "homogeneous" soil material (without a core zone) and compacted to medium density.

**EXCAVATED PONDS (AQUIFER-FED)** are bodies of water created by excavating a pit or dugout into a ground-water aquifer. Excluded are ponds which are fed by surface runoff or that have embankments that impound water 3 feet or more above the original surface.

**DRAINAGE** is the process of removing excess surface and subsurface water from agricultural land. Soil features are listed that affect grading, excavation, and stability of trench sides or ditch banks. Features are also listed which might affect productivity after drainage is installed. The availability of drainage outlets must also be considered.

**IRRIGATION** is the controlled application of water to supplement rainfall for supporting plant growth. Soil features are listed that affect design, layout, construction, management, or performance of an irrigation system.

**TERRACES AND DIVERSIONS** are embankments or a combination of an embankment and a channel constructed across a slope to control erosion by diverting or storing surface runoff instead of permitting it to flow uninterrupted down the slope. Soil features are listed that affect the construction of terraces and diversions and that may cause problems after construction.

**GRASSED WATERWAYS** are natural or constructed channels that generally are broad and shallow and are covered with erosion-resistant grasses. They are used to conduct surface water to outlets at a nonerosive velocity. Soil features are listed that affect the construction and maintenance of the waterway, and also that affect the growth of grass after construction.

*This subsection includes:*

- **(a) Water Management**

# Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.  
See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
15002: McGirk-----	Slight	Severe: hard to pack wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
60001, 60002: Menfro-----	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: frost action slope deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
60003, 60004, 60005: Menfro-----	Severe: slope	Moderate: piping	Severe: no water	Limitation: frost action slope deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
60006: Marion-----	Moderate: slope	Moderate: hard to pack wetness	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
60007: Menfro-----	Severe: slope	Moderate: piping	Severe: no water	Limitation: frost action slope deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
Gatewood-----	Severe: slope	Severe: hard to pack thin layer	Severe: no water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly slope depth to rock
64000: Racoon-----	Slight	Severe: wetness	Severe: no water	Limitation: frost action percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
64001, 64002: Freeburg-----	Slight	Moderate: piping wetness	Severe: no water	Limitation: frost action	Limitation: erodes easily wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
64003: Freeburg-----	Moderate: slope	Moderate: piping wetness	Severe: no water	Limitation: frost action slope	Limitation: erodes easily slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
66003: Jemerson-----	Moderate: seepage	Moderate: piping wetness	Severe: no water	Limitation: frost action deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
66004: Dockery-----	Moderate: seepage	Severe: wetness	Severe: no water	Limitation: flooding frost action	Limitation: erodes easily flooding wetness	Limitation: erodes easily wetness	Limitation: erodes easily
66005: Deible-----	Slight	Severe: wetness	Severe: no water	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
66006: Waldron-----	Slight	Severe: hard to pack wetness	Severe: no water	Limitation: flooding frost action percs slowly	Limitation: flooding percs slowly wetness	Limitation: percs slowly wetness	Limitation: percs slowly wetness
66007: Leta-----	Moderate: seepage	Severe: piping wetness	Severe: no water	Limitation: flooding frost action percs slowly	Limitation: flooding percs slowly slow intake wetness	Limitation: percs slowly wetness	Limitation: percs slowly wetness
66008: Leta-----	Moderate: seepage	Severe: piping wetness	Severe: no water	Limitation: flooding frost action percs slowly	Limitation: flooding percs slowly wetness	Limitation: percs slowly wetness	Limitation: percs slowly wetness
66009: Haynie-----	Moderate: seepage	Severe: piping	Severe: no water	Limitation: flooding frost action deep to water	Limitation: flooding	Favorable	Favorable
66010: Sarpy-----	Severe: seepage	Severe: seepage piping	Severe: no water cutbanks cave	Limitation: flooding cutbanks cave deep to water	Limitation: fast intake flooding soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
66011: Moville-----	Slight	Severe: hard to pack	Severe: no water	Limitation: flooding frost action percs slowly	Limitation: erodes easily flooding percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
66012: Blake-----	Moderate: seepage	Moderate: piping wetness	Severe: no water	Limitation: flooding frost action	Limitation: flooding wetness	Limitation: wetness	Favorable
66013: Waldron-----	Slight	Severe: hard to pack wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: percs slowly wetness	Limitation: percs slowly wetness

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
70028, 70029: Moko-----	Severe: slope depth to rock	Severe: thin layer	Severe: no water depth to rock	Limitation: slope deep to water depth to rock	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop.							
73035: Gravois-----	Severe: slope	Moderate: wetness piping	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly slope
73088, 73089: Rueter-----	Severe: seepage slope	Moderate: large stones piping	Severe: no water	Limitation: large stones slope deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope droughty
73090: Useful-----	Moderate: seepage slope depth to rock	Moderate: hard to pack piping thin layer wetness	Severe: no water	Limitation: slope	Limitation: erodes easily slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily
73091: Useful-----	Severe: slope	Moderate: hard to pack piping thin layer wetness	Severe: no water	Limitation: slope	Limitation: erodes easily slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily slope
73092: Gatewood-----	Moderate: slope depth to rock	Severe: hard to pack thin layer	Severe: no water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly wetness depth to rock	Limitation: percs slowly depth to rock
73093, 73094: Gatewood-----	Severe: slope	Severe: hard to pack thin layer	Severe: no water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly wetness depth to rock	Limitation: percs slowly slope depth to rock
73095: Gravois-----	Severe: slope	Moderate: piping wetness	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly slope
73096, 73097: Swiss-----	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly slope wetness	Limitation: percs slowly slope

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
73098: Plato-----	Slight	Moderate: wetness piping hard to pack	Severe: no water	Limitation: percs slowly	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly rooting depth wetness	Limitation: erodes easily percs slowly rooting depth wetness
73099: Plato-----	Moderate: slope	Moderate: wetness piping hard to pack	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly rooting depth wetness	Limitation: erodes easily percs slowly rooting depth wetness
73100, 73101, 73102: Wrengart-----	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Limitation: slope	Limitation: erodes easily slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily
73103, 73104: Wrengart-----	Severe: slope	Moderate: piping wetness	Severe: no water	Limitation: slope	Limitation: erodes easily slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily slope
73105: Wrengart-----	Severe: slope	Moderate: piping wetness	Severe: no water	Limitation: slope	Limitation: erodes easily slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily slope
Gatewood-----	Severe: slope	Severe: hard to pack thin layer	Severe: no water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly slope depth to rock
73106: Mariosa-----	Slight	Severe: wetness hard to pack	Severe: no water	Limitation: frost action percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
73107: Wrengart-----	Moderate: seepage slope	Moderate: piping wetness	Severe: no water	Limitation: slope	Limitation: erodes easily slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily
Swiss-----	Moderate: slope	Severe: hard to pack	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly wetness	Limitation: percs slowly
73108: Gravois-----	Moderate: slope	Moderate: piping wetness	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
73108: Gatewood-----	Moderate: slope depth to rock	Severe: hard to pack thin layer	Severe: no water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly wetness depth to rock	Limitation: percs slowly depth to rock
73109: Alred-----	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: percs slowly slope deep to water	Limitation: percs slowly slope droughty	Limitation: percs slowly slope	Limitation: percs slowly slope droughty
73110: Gravois-----	Severe: slope	Moderate: piping wetness	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly slope
Gatewood-----	Severe: slope	Severe: hard to pack thin layer	Severe: no water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly slope wetness depth to rock	Limitation: percs slowly slope depth to rock
73112: Gunlock-----	Moderate: slope	Moderate: piping wetness	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
73135: Union-----	Moderate: slope	Moderate: piping wetness	Severe: no water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly rooting depth wetness	Limitation: erodes easily percs slowly rooting depth
74633: Hartville-----	Slight	Moderate: hard to pack wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
74634: Hartville-----	Moderate: slope	Moderate: hard to pack wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: erodes easily percs slowly slope wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
74635: Tanglenook-----	Slight	Severe: wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: erodes easily percs slowly slow intake wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness percs slowly

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
75376: Cedargap-----	Moderate: seepage	Slight	Severe: no water	Limitation: flooding deep to water	Limitation: flooding	Favorable	Favorable
75391: Possumtrot-----	Severe: seepage	Severe: piping	Severe: no water	Limitation: flooding deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Favorable
75395: Jamesfin-----	Moderate: seepage	Severe: piping	Severe: no water	Limitation: flooding deep to water	Limitation: erodes easily flooding frost action	Limitation: erodes easily	Limitation: erodes easily
75398: Kaintuck-----	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: flooding deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Favorable
75399: Jamesfin-----	Moderate: seepage	Severe: piping	Severe: no water	Limitation: flooding deep to water	Limitation: erodes easily flooding frost action	Limitation: erodes easily	Limitation: erodes easily
75400: Gladden-----	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: flooding deep to water	Limitation: flooding	Favorable	Favorable
75407: Gabriel-----	Slight	Severe: wetness	Severe: no water	Limitation: frost action	Limitation: wetness	Limitation: wetness	Limitation: wetness
99000. Pits, quarries							
99001. Water							
99003. Miscellaneous water							